AJPARK27.001APC_SEQUENCE LISTING.txt SEQUENCE LISTING

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Galloway, Susan May
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         Gregan, Scott Michael
         Hanrahan, James Patrick
Juengel, Jennifer Lee
McNatty, Kenneth Pattrick
Mulsant, Philippe
Powell, Richard Patrick
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c atg gcg	ctt cc	c aac aa	aa ttc ti	tc cti	t t <u>c</u>	g tt	t tg	jc tg	c ttt	gcc	166
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act tgg to Thr Trp So		Leŭ Asn	cat tta His Leu	ggt Gly -265	ggg Gly					ggt Gly	301
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ccc ccc a Pro Pro A			gat gac Asp Asp							aag Lys	391
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gcagattgg	t taatg	ggtgg ag	ggaagaag	aaaga	acctt	t tt	gcat	ttca	gtta	cataa	a 588
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ttcttctca	g ga a Gly Tl	cc ttt (hr Phe I	cca tca g Pro Ser \	gtg ga /al As	at c	tg c	tg t	tt a	ac ct	g ga u Ası	

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tgc aac ctg gtg ata aaa gag cca gag ttt tct agc aag act ctc Cys Asn Leu Val Ile Lys Glu Pro Glu Phe Ser Ser Lys Thr Leu -140 -135 -130	1011
cct aga gct cca tac tca ttt acc tat aac tca cag ttt gaa ttt Pro Arg Ala Pro Tyr Ser Phe Thr Tyr Asn Ser Gln Phe Glu Phe -125 -120 -115	1056
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cca gct tca gtc aat ctg agt gaa tac ttc aaa cag ttt ctt ttt ccc Pro Ala Ser Val Asn Leu Ser Glu Tyr Phe Lys Gln Phe Leu Phe Pro 15 20 25 30	1485
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aag tgg gac aac tgg att gtg gcc cca cac aaa tac aac cct cga tac Lys Trp Asp Asn Trp Ile Val Ala Pro His Lys Tyr Asn Pro Arg Tyr 50 55 60	1581
tgt aaa ggg gac tgt ccc agg gcg gtc gga cat cgg tat ggc ttt ccg Cys Lys Gly Asp Cys Pro Arg Ala Val Gly His Arg Tyr Gly Phe Pro	1629

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gtg cca aga Val Pro Arg 95	Pro Ser (tgt gta cct (Cys Val Pro / 100	gcc aag tat Ala Lys Tyr 105	agc cct ttg agt Ser Pro Leu Ser	gtt 1725 Val 110
ttg gcc atc Leu Ala Ile	gag cct q Glu Pro A 115	gat ggc tca Asp Gly Ser	atc gct tat Ile Ala Tyr 120	aaa gaa tat gaa Lys Glu Tyr Glu 125	ı Asp
atg ata gcc Met Ile Ala		Cys Thr Cys /		ctc ctgtcaagta	1820
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Glu Ala Gln	Ile Val -285	Ala Arg Thr	Ala Leu G	lu Ser Glu Ala -275	Glu
Thr Trp Ser	Leu Leu -270	Asn His Leu	Gly Gly A	rg His Arg Pro -260	Gly
Leu Leu Ser	Pro Leu -255	Leu Glu Val	Leu Tyr As -250	sp Gly нis Gly -245	Glu
Pro Pro Arg	Leu Gln -240	Pro Asp Asp	Arg Ala Lo	eu Arg Tyr Met -230	Lys

Arg Leu Tyr Lys Ala Tyr Ala Thr Lys Glu Gly Thr Pro Lys Ser -215

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Pro Ser Val Asp Leu Leu Phe Asn Leu Asp Arg Val Thr Val Val -180 -175

Glu His Leu Phe Lys Ser Val Leu Leu Tyr Thr Phe Asn Asn Ser -165 -160 -155

Lys Glu Pro Glu Phe Ser Ser Lys Thr Leu Pro Arg Ala Pro Tyr -135 -130 -125

Ser Phe Thr Tyr Asn Ser Gln Phe Glu Phe Arg Lys Lys Tyr Lys -120 -115 -110

Trp Met Glu Ile Asp Val Thr Ala Pro Leu Glu Pro Leu Val Ala Ser -105 -100 -95

His Lys Arg Asn Ile His Met Ser Val Asn Phe Thr Cys Ala Glu Asp -90 -85 -80

Gln Leu Gln His Pro Ser Ala Arg Asp Ser Leu Phe Asn Met Thr Leu
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Leu Val Ala Pro Ser Leu Leu Leu Tyr Leu Asn Asp Thr Ser Ala Gln -60 -55 -50 -45

Ala Phe His Arg Trp His Ser Leu His Pro Lys Arg Lys Pro Ser Gln
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Gly Pro Asp Gln Lys Arg Gly Leu Ser Ala Tyr Pro Val Gly Glu Glu -25 -20 -15

Ala Ala Glu Gly Val Arg Ser Ser Arg His Arg Arg Asp Gln Glu Ser
-10 -5 -1 1

Ala Ser Ser Glu Leu Lys Lys Pro Leu Val Pro Ala Ser Val Asn Leu Page 5 Ser Glu Tyr Phe Lys Gln Phe Leu Phe Pro Gln Asn Glu Cys Glu Leu 25 30 35

His Asp Phe Arg Leu Ser Phe Ser Gln Leu Lys Trp Asp Asn Trp Ile 40 45 50

Val Ala Pro His Lys Tyr Asn Pro Arg Tyr Cys Lys Gly Asp Cys Pro
55 60 65

Arg Ala Val Gly His Arg Tyr Gly Phe Pro Val His Thr Met Val Gln 70 75 80

Asn Ile Ile His Glu Lys Leu Asp Ser Ser Val Pro Arg Pro Ser Cys 95 100

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gaa Glu	gct Ala	cag Gln	att Ile -285	gta Val	gct Ala	agg Arg	act Thr	gcg Ala -280	ttg Leu	gaa Glu	tct Ser	gag Glu	gct Ala -275	gag Glu	135
act Thr	tgg Trp	tcc Ser	ttg Leu -270	ctg Leu	aac Asn	cat His	tta Leu	ggt Gly -265	ggg Gly	aga Arg	cac His	aga Arg	cct Pro -260	ggt Gly	180
			cct Pro -255										ggg Gly -245	gaa Glu	225
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agg Arg	ctc Leu	tat Tyr	aag Lys -225	gca Ala	tac Tyr	gct Ala	acc Thr	aag Lys -220	gag Glu	ggg Gly	acc Thr	cct Pro	aaa Lys -215	tcc Ser	315
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gaa Glu	cat His	tta Leu	ttc Phe -165	aag Lys	tca Ser	gtc Val	ttg Leu	ctg Leu -160	tat Tyr	act Thr	ttc Phe	aac Asn	aac Asn -155	tcc Ser	495
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tca Ser	ttt Phe	acc Thr	tat Tyr -120										tac Tyr -110	aaa Lys	630
tgg Trp	atg Met	gag Glu	att Ile -105	gat Asp	gtg Val	acg Thr	gct Ala	cct Pro -100	ctt Leu	gag Glu	cct Pro	ctg Leu	gtg (val / -95	gcc tcc Ala Ser	678
						Met 9					ir C		cg gaa la Glu		726

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ctc gta gcg Leu Val Ala -60	ccc tca ctg Pro Ser Leu -55	Leu Leu Tyr	ctg aac gac Leu Asn Asp -50	aca agt gct Thr Ser Ala	cag 822 Gln -45
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cat gac ttt His Asp Phe	aga ctt ago Arg Leu Ser 40	ttt agt cag Phe Ser Gln 45	ctg aag tgg Leu Lys Trp	gac aac tgg Asp Asn Trp 50	att 1110 Ile
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			tca gtg cca Ser Val Pro 95		
gta cct gcc Val Pro Ala	aag tat ago Lys Tyr Ser 105	cct ttg agt Pro Leu Ser	gtt ttg gcc Val Leu Ala 110	atc gag cct Ile Glu Pro 115	gat 1302 Asp
ggc tca atc Gly Ser Ile	gct tat aaa Ala Tyr Lys 120	gaa tat gaa Glu Tyr Glu 125	gat atg ata Asp Met Ile	gcc act aag Ala Thr Lys 130	tgt 1350 Cys
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-300 -295 -290

Glu Ala Gln Ile Val Ala Arg Thr Ala Leu Glu Ser Glu Ala Glu
-285 -280 -275

Thr Trp Ser Leu Leu Asn His Leu Gly Gly Arg His Arg Pro Gly
-270 -265 -260

Leu Leu Ser Pro Leu Leu Glu Val Leu Tyr Asp Gly His Gly Glu
-255 -245

Pro Pro Arg Leu Gln Pro Asp Asp Arg Ala Leu Arg Tyr Met Lys
-240 -235 -230

Arg Leu Tyr Lys Ala Tyr Ala Thr Lys Glu Gly Thr Pro Lys Ser
-225 -220 -215

Asn Arg Arg His Leu Tyr Asn Thr Val Arg Leu Phe Thr Pro Cys
-210 -205 -200

Ala Gln His Lys Gln Ala Pro Gly Asp Leu Ala Ala Gly Thr Phe
-195 -190 -185

Pro Ser Val Asp Leu Leu Phe Asn Leu Asp Arg Val Thr Val Val -180 -175 -170

Glu His Leu Phe Lys Ser Val Leu Leu Tyr Thr Phe Asn Asn Ser -165 -160 -155

Ile Ser Phe Pro Phe Pro Val Lys Cys Ile Cys Asn Leu Val Ile -150 -145 -140

Lys Glu Pro Glu Phe Ser Ser Lys Thr Leu Pro Arg Ala Pro Tyr
-135 -130 -125

Ser Phe Thr Tyr Asn Ser Gln Phe Glu Phe Arg Lys Lys Tyr Lys
Page 9

AJPARK27.001APC_SEQUENCE LISTING.txt -120 -115 -110

Trp Met Glu Ile Asp Val Thr Ala Pro Leu Glu Pro Leu Val Ala Ser
-105 -100 -95 His Lys Arg Asn Ile His Met Ser Val Asn Phe Thr Cys Ala Glu Asp -90 -85 -80 Gln Leu Gln His Pro Ser Ala Arg Asp Ser Leu Phe Asn Met Thr Leu
-75 -65 Leu Val Ala Pro Ser Leu Leu Leu Tyr Leu Asn Asp Thr Ser Ala Gln -60 -55 -50 -45 Ala Phe His Arg Trp His Ser Leu His Pro Lys Arg Lys Pro Ser Gln
-40 -35 -30 Gly Pro Asp Gln Lys Arg Gly Leu Ser Ala Tyr Pro Val Gly Glu Glu
-25 -20 -15 Ala Ala Glu Gly Val Arg Ser Ser Arg His Arg Arg Asp Gln Glu Ser
-10 -5 -1 1 Ala Ser Ser Glu Leu Lys Lys Pro Leu Val Pro Ala Ser Val Asn Leu 5 10 15 20 Ser Glu Tyr Phe Lys Gln Phe Leu Phe Pro Gln Asn Glu Cys Glu Leu 25 30 35 His Asp Phe Arg Leu Ser Phe Ser Gln Leu Lys Trp Asp Asn Trp Ile 40 45 50Val Ala Pro His Lys Tyr Asn Pro Arg Tyr Cys Lys Gly Asp Cys Pro 55 60 65 Arg Ala Val Gly His Arg Tyr Gly Phe Pro Val His Thr Met Val Gln 70 75 80 Asn Ile Ile His Glu Lys Leu Asp Ser Ser Val Pro Arg Pro Ser Cys 85 90 95 100 Val Pro Ala Lys Tyr Ser Pro Leu Ser Val Leu Ala Ile Glu Pro Asp 105 110 115 Gly Ser Ile Ala Tyr Lys Glu Tyr Glu Asp Met Ile Ala Thr Lys Cys 120 125 130

AJPARK27.001APC_SEQUENCE LISTING.txt Thr Cys Arg 135

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Asp Cys Pro Arg Ala Val Gly His Arg Tyr Gly Phe Pro Val His Thr
20 25 30

atg gtg cag aac atc atc cat gag aaa ctt gac tcc tca gtg cca aga 144 Met Val Gln Asn Ile Ile His Glu Lys Leu Asp Ser Ser Val Pro Arg 35 40 45

cca tcc tgt gta cct gcc aag tat
Pro Ser Cys Val Pro Ala Lys Tyr
50 55

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Asp Cys Pro Arg Ala Val Gly His Arg Tyr Gly Phe Pro Val His Thr 20 25 30

Met Val Gln Asn Ile Ile His Glu Lys Leu Asp Ser Ser Val Pro Arg 35 40 45

Pro Ser Cys Val Pro Ala Lys Tyr 50 55

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                                                                          180
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                                                                          240
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aagcttttca ag atg gtc ctc ctg agc atc ctt aga atc ctt ctt tgg gga
Met Val Leu Leu Ser Ile Leu Arg Ile Leu Leu Trp Gly
                                                                          291
                                                                          339
ctg gtg ctt ttt atg gaa cat agg gtc caa atg aca cag gta ggg cag
Leu Val Leu Phe Met Glu His Arg Val Gln Met Thr Gln Val Gly Gln
    15
                          20
                                                                          387
ccc tct att qcc cac ctq cct qaq qcc cct acc ttg ccc ctg att cag
Pro Ser Ile Ăla His Leu Pro Ğlu Ăla Pro Thr Leu Pro Leu Ile Gln
30
                                                                          435
gag ctg cta gaa gaa gcc cct ggc aag cag cag agg aag ccg cgg gtc
Ğlü Leü Leu Ğlu Ğlu Ala Pro Ğly Lys Gln Gln Arg Lys Pro Arg Val
                                                                          483
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Leu Gly His Pro Leu Arg Tyr Met Leu Glu Leu Tyr Gln Arg Ser Ala
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VISTAINTEN CODE (CESTIVEE ELS ENCERTES)	
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gtg agg ctg gtg agg ccg ctg gct agt gta gca agg cct ctc aga g	577
Val Arg Leu Val Arg Pro Leu Ala Ser Val Ala Arg Pro Leu Arg 95 100 105	
gtgagttatc atactatatt gttctggtgg gaggggggga gaaaatgggg aagaaaagtg	637
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cgc cat cag ctt cac cta act cat tcc cac ctc tcc tgc cat gtg gag Arg His Gln Leu His Leu Thr His Ser His Leu Ser Cys His Val Glu 140 145 150	904
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Page 14

1555

16151665

130

Ser His Leu Ser Cys His Val Glu Pro Trp Val Gln Lys Ser Pro Thr 145 155 160 Asn His Phe Pro Ser Ser Gly Arg Gly Ser Ser Lys Pro Ser Leu Leu 165 Pro Lys Thr Trp Thr Glu Met Asp Ile Met Glu His Val Gly Gln Lys Leu Trp Asn His Lys Gly Arg Arg Val Leu Arg Leu Arg Phe Val Cys 195 200 205 Gln Gln Pro Arg Gly Ser Glu Val Leu Glu Phe Trp Trp His Gly Thr Ser Ser Leu Asp Thr Val Phe Leu Leu Leu Tyr Phe Asn Asp Thr 230 <210> 9 <211> 1182 <212> DNA <213> Ovis areis <220> <221> misc_feature <222> (1)..(3)<223> atg start codon <220> <221> <222> mutation (718)..(720)<223> c to t at 718 of [S1] sheep changes cag glutamine codon to tag STOP. <220> <221> CDS (1)..(717)<222> <220> <221> <222> misc_feature (805)..(807)<223> first codon of mature peptide in wildtype sheep. <220> <221> misc_feature <222> (1180)..(1182)<223> tga stop codon. <400> atg gtc ctc ctg agc atc ctt aga atc ctt ctt tgg gga ctg gtg ctt Met Val Leu Leu Ser Ile Leu Arg Ile Leu Leu Trp Gly Leu Val Leu 48 ttt atg gaa cat agg gtc caa atg aca cag gta ggg cag ccc tct att Phe Met Glu His Arg Val Gln Met Thr Gln Val Gly Gln Pro Ser Ile 96 30 144 gcc cac ctg cct gag gcc cct acc ttg ccc ctg att cag gag ctg cta

Page 15

Ala His Leu Pro Glu Ala Pro Thr Leu Pro Leu Ile Gln Glu Leu Leu

		,,,					10									
gaa Glu	gaa Glu 50	gcc Ala	cct Pro	ggc Gly	aag Lys	cag Gln 55	cag Gln	agg Arg	aag Lys	ccg Pro	cgg Arg 60	gtc val	tta Leu	ggg Gly	cat His	192
ccc Pro 65	tta Leu	cgg Arg	tat Tyr	atg Met	ctg Leu 70	gag Glu	ctg Leu	tac Tyr	cag Gln	cgt Arg 75	tca Ser	gct Ala	gac Asp	gca Ala	agt Ser 80	240
gga Gly	cac His	cct Pro	agg Arg	gaa Glu 85	aac Asn	cgc Arg	acc Thr	att Ile	ggg GTy 90	gcc Ala	acc Thr	atg Met	gtg Val	agg Arg 95	ctg Leu	288
gtg Val	agg Arg	ccg Pro	ctg Leu 100	gct Ala	agt Ser	gta Val	gca Ala	agg Arg 105	cct Pro	ctc Leu	aga Arg	ggc Gly	tcc Ser 110	tgg Trp	cac His	336
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cta Leu	gtc Val 130	aga Arg	gcc Ala	act Thr	gtg Val	gtt Val 135	tac Tyr	cgc Arg	cat His	cag Gln	ctt Leu 140	cac His	cta Leu	act Thr	cat His	432
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cag	cag	cca	aga	ggt	agt	gag	gtt	ctt	gag	ttc	tgg	tgg	cat	ggc	act	672
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taga	agtgi	ttc a	agaa	gacca	aa a	cctc	tccc1	t aaa	aggc	ctga	aaga	agtt	tac a	agaa	aaagac	777
cctt	ctct	ttc 1	tctt	gagga	ag gg	gctc	gtcaa	a gca	aggca	agta	ttg	catc	gga a	agtt	cctggc	837
ccct	cca	ggg a	agca	tgate	gg go	cctga	aaagt	t aa	ccag	tgtt	ccct	tcca	ccc ·	tttt	caagtc	897
agct	ttcca	agc a	agct	gggci	tg gg	gatca	actg	gate	catt	gctc	ccca	atct	cta ·	tacc	ccaaac	957
tact	tgtaa	agg g	gagta	atgt	cc to	cggg	tacta	a ca	ctate	ggtc	tcaa	attc	tcc (caat	catgcc	1017
atca	atcca	aga a	acct	tgtca	ag t	gagc	tggt	g ga	tcaga	aatg	tcc	ctca	gcc ·	ttcc	tgtgtc	1077
									ane	16						

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                          55
                                               60
Pro Leu Arg Tyr Met Leu Glu Leu Tyr Gln Arg Ser Ala Asp Ala Ser
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Gly His Pro Arg Glu Asn Arg Thr Ile Gly Ala Thr Met Val Arg Leu
Val Arg Pro Leu Ala Ser Val Ala Arg Pro Leu Arg Gly Ser Trp His
100 105 110
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Ser His Leu Ser Cys His Val Glu Pro Trp Val Gln Lys Ser Pro Thr Page 17

Ile Gln Thr Leu Asp Phe Pro Leu Arg Pro Asn Arg Val Ala Tyr Gln

Leu Val Arg Ala Thr Val Val Tyr Arg His Gln Leu His Leu Thr His

140

135

130

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Gln Gln Pro Arg Gly Ser Glu Val Leu Glu Phe Trp His Gly Thr
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                                        10
                                                               15
                                                                               94
gac act gtc ttc ttg tta ctg tat ttc aat gac act tagagtgttc
Asp Thr Val Phe Leu Leu Leu Tyr Phe Asn Asp Thr
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acc att ggg gcc acc atg gtg agg ctg gtg agg ccg ctg gct agt Thr Ile Gly Ala Thr Met Val Arg Leu Val Arg Pro Leu Ala Ser -180 -175 -170	558
gta gca agg cct ctc aga g gtgagttatc atactatatt gttctggtgg Val Ala Arg Pro Leu Arg -165	607
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caggcttcac attgcctnca gtttgtactg agcaggtctg ttagagagac taaggctagg	727
atataagaag ctaacgcttt gctcttgttc cctcttacta atgcag gc tcc tgg Gly Ser Trp -160	781
cac ata cag acc ctg gac ttt cct ctg aga cca aac cgg gta gca	826
His Ile Gln Thr Leu Asp Phe Pro Leu Arg Pro Asn Arg Val Ala -155 -150 -145	
tac caa cta gtc aga gcc act gtg gtt tac cgc cat cag ctt cac Tyr Gln Leu Val Arg Ala Thr Val Val Tyr Arg His Gln Leu His -140 -135 -130	871
cta act cat tcc cac ctc tcc tgc cat gtg gag ccc tgg gtc cag Leu Thr His Ser His Leu Ser Cys His Val Glu Pro Trp Val Gln -125 -120 -115	916
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                                                                                   1345
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Ser Phe Gln Gln Leu Gly Trp Asp His Trp Ile Ile Ala Pro His Leu
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Leu Val Asp Gln Asn Val Pro Gln Pro Ser Cys Val Pro Tyr Lys Tyr
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Val Pro Ile Ile Ile Leu Leu Ile Glu Ala Asn Gly Ser Ile Leu Tyr
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                                                                    110
                   100
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-220 -215 -210 Val Leu Gly His Pro Leu Arg Tyr Met Leu Glu Leu Tyr Gln Arg -205 -200 -195 Ser Ala Asp Ala Ser Gly His Pro Arg Glu Asn Arg Thr Ile Gly
-190 -185 -180 Ala Thr Met Val Arg Leu Val Arg Pro Leu Ala Ser Val Ala Arg -175 -170 -165 Pro Leu Arg Gly Ser Trp His Ile Gln Thr Leu Asp Phe Pro Leu -160 -155 -150Arg Pro Asn Arg Val Ala Tyr Gln Leu Val Arg Ala Thr Val Val -145 -140 -135 Tyr Arg His Gln Leu His Leu Thr His Ser His Leu Ser Cys His
-130 -125 -120 Val Glu Pro Trp Val Gln Lys Ser Pro Thr Asn His Phe Pro Ser
-115 -110 -105 Ser Gly Arg Gly Ser Ser Lys Pro Ser Leu Leu Pro Lys Thr Trp Thr -100 -95 -90Glu Met Asp Ile Met Glu His Val Gly Gln Lys Leu Trp Asn His Lys
-85 -80 -75 Gly Arg Arg Val Leu Arg Leu Arg Phe Val Cys Gln Gln Pro Arg Gly
-70 -65 -60 Ser Glu Val Leu Glu Phe Trp Trp His Gly Thr Ser Ser Leu Asp Thr -55 -45 -45 Val Phe Leu Leu Tyr Phe Asn Asp Thr Gln Ser Val Gln Lys Thr
-35 -30 -25 Lys Pro Leu Pro Lys Gly Leu Lys Glu Phe Thr Glu Lys Asp Pro Ser

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Leu Leu Leu Arg Arg Ala Arg Gln Ala Gly Ser Ile Ala Ser Glu Val
-5 -1 1 5

Pro Gly Pro Ser Arg Glu His Asp Gly Pro Glu Ser Asn Gln Cys Ser 10 20 25

Leu His Pro Phe Gln Val Ser Phe Gln Gln Leu Gly Trp Asp His Trp 30 35 40

Ile Ile Ala Pro His Leu Tyr Thr Pro Asn Tyr Cys Lys Gly Val Cys
45 50 55

Pro Arg Val Leu His Tyr Gly Leu Asn Ser Pro Asn His Ala Ile Ile 60 65 70

Gln Asn Leu Val Ser Glu Leu Val Asp Gln Asn Val Pro Gln Pro Ser
75 80 85

Cys Val Pro Tyr Lys Tyr Val Pro Ile Ile Ile Leu Leu Ile Glu Ala 90 95 100 105

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Pro	Arg	va1 60	Leu	ніѕ	Туг	Gly	Leu 65	Asn	Ser	Pro	Asn	нis 70	Ala	Ile	Ile	
Gln	Asn 75	Leu	val	Ser	Glu	Leu 80	۷al	Asp	Gln	Asn	Va1 85	Pro	Gln	Pro	Ser	
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iso [^]	l euc	ine o			01 \	JD1 J1	J 3111	LCP .	cman	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	uge .	, c		Juon	to att	
gcc)> : atc Ile	atc	cag Gln	aac Asn 5	ctt Leu	gtc Val	agt Ser	gag Glu	ctg Leu 10	gtg Val	gat Asp	cag Gln	aat Asn	gtc Val 15	cct Pro	48
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Ile Glu Ala Asn Gly Ser Ile Leu Tyr Lys Glu Tyr Glu Gly Met Ile 35 40 45

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